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February 26, 1986

Governor's Office, Helena, MT 59620
Stillwater Mining Co., P. O. Box 365, Nye, MT 59061
Keith E. Brown, Brown Engineering, P. O. Box 508, Nye, MT 59061
Stillwater County Health Dept., Courthouse, Box 111, Columbus, MT 59019
Stillwater County Planning Board, Courthouse, Columbus, MT 59019
Stillwater County Commissioners, County Courthouse, Columbus, MT 59019
Montana Bureau of Mines & Geology, c/o Montana Tech, W. Park Street,
  Butte, MT 59701
Soil Conservation Service, Federal Building, Bozeman, MT 59715
HUD Regional/Area Office, O.I.L.S.R., Attn: Carroll Goodwin, Executive Tower
  Building, 1405 Curtis Street, Denver, CO 80202
HUD Regional/Area Office, O.I.L.S.R., Attn: Pat Donohue, Executive Tower
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Department of Commerce, Helena, MT 59620
Department of Fish, Wildlife and Parks, Helena, MT 59620
Department of Highways, Helena, MT 59620
Department of Natural Resources and Conservation, Helena, MT 59620
Fire Marshal Bureau, Department of Justice, 1409 Helena Ave., Helena, MT 59620
Information Unit, Department of Health & Environmental Sciences, Helena,
  MT 59620
Environmental Information Center, P. O. Box 1184, Helena, MT 59624
Montana Historical Society, 225 N. Roberts, Helena, MT 59601

RE: Stratton Ranch Camp
Stillwater County

Ladies and Gentlemen:

The enclosed Preliminary Environmental Review (PER) has been prepared for Stratton Ranch Camp in Stillwater County, and is submitted for your consideration. Questions and comments will be accepted until February 13, 1986. One extension of time not to exceed seven days will be granted upon request if there is sufficient reason for the request. All comments should be sent to the undersigned.

Sincerely,

Steve L. Pilcher

Steven L. Pilcher, Chief
Water Quality Bureau
Environmental Sciences Division

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Cogswell Building, Helena, Montana 59620
(406) 444-2406

PRELIMINARY ENVIRONMENTAL REVIEW

Division/Bureau Environmental Sciences Division/Water Quality Bureau

Project or Application Stratton Ranch Camp

Description of Project This proposed development is located three miles south of Nye in Stillwater County. The development is proposed to be a 60 unit trailer court and five dormitories with a cafeteria to serve the dormitories. The development will provide housing to the Stratton Ranch Mine. The property is currently undeveloped range property. Water and sewer will be provided by on-site public water and sewer systems. NOTE: This P.E.R. will be an addendum to the E.I.S. prepared by Camp Dresser and McGee (C.D.M.). The contents of this P.E.R. will address the storm drainage, sewer system, and water system for the proposed trailer court and dormitories.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial & aquatic life and habitats		REFER TO THE E.I.S. PERFORMED BY C.D.M.				
2. Water quality, quantity and distribution			X			*
3. Geology & soil quality, stability and moisture			X			*
4. Vegetation cover, quantity and quality						
5. Aesthetics						
6. Air quality						
7. Unique, endangered, fragile, or limited environmental resources						
8. Demands on environmental resources of land, water, air & energy						
9. Historical and archaeological sites						

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores		REFER TO THE E.I.S. PERFORMED BY C.D.M.				
2. Cultural uniqueness and diversity						
3. Local and state tax base & tax revenue						
4. Agricultural or industrial production						
5. Human health						
6. Quantity and distribution of community and personal income						
7. Access to and quality of recreational and wilderness activities						
8. Quantity and distribution of employment						
9. Distribution and density of population and housing						
10. Demands for government services						
11. Industrial & commercial activity						
12. Demands for energy						
13. Locally adopted environmental plans & goals						
14. Transportation networks & traffic flows						

Other groups or agencies contacted or which may have overlapping jurisdiction Stillwater County Commissioners and County Planning Board

Individuals or groups contributing to this PER. Brown Engineering

Recommendation concerning preparation of EIS An E.I.S. has been completed for the impact of the Stratton Mine.

PER Prepared by: Joseph A. Strasko

Date: February 26, 1986

DHES/ESD-2

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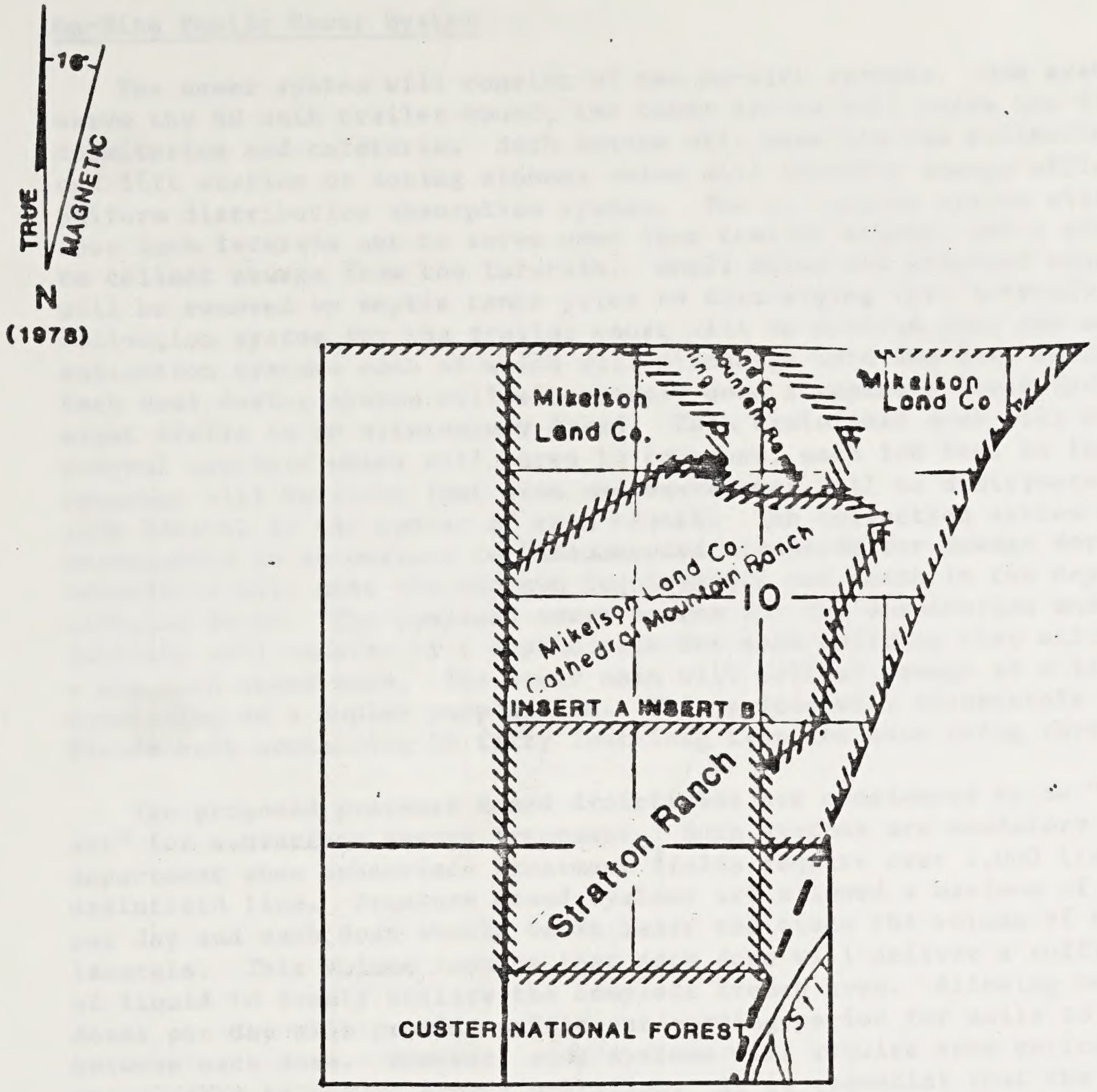


Brown engineering

406, Nye, Montana 59061 Phone: (406) 328-6114

scale 1" - 1980'	date 8/13/85	title Stratton Ranch
drn clh	ckd	
project SMC Construction Camp		BOUNDARY OWNERSHIP Figure 7

On-Site Public Sewer System

The sewer system will consist of two on-site systems. One system will serve the 60 unit trailer court, the other system will serve the five dormitories and cafeteria. Each system will have its own collection system and lift station or dosing siphons which will transfer sewage effluent to a uniform distribution absorption system. The collection system will consist of four inch laterals not to serve over four trailer houses, and a six inch main to collect sewage from the laterals. Small mains are proposed since solids will be removed by septic tanks prior to discharging into laterals. The collection system for the trailer court will be divided into two separate collection systems each of which will discharge into two dual dosing systems. Each dual dosing system will alternately dose a separate field for a total of eight fields to be alternately dosed. Each drainfield area will consist of a central manifold which will serve 13 trenches, each 100 feet in length. The trenches will be three feet wide and wastewater will be distributed by a two inch lateral in the center of each trench. The collection system will be constructed in accordance to "Recommended Standards for Sewage Works". The drainfield will meet the minimum requirements set forth in the department circular 84-10. The proposed sewer system for the dormitories and kitchen facility will consist of a septic tank for each building that will empty into a six inch sewer main. The sewer main will deliver sewage to a lift station consisting of a duplex pump system. This system will alternately dose two fields each containing 18 fifty foot long trenches each being three feet wide.

The proposed pressure dosed drainfields are considered to be "state of the art" for subsurface sewage treatment. Such systems are mandatory by this department when subsurface treatment fields require over 1,000 lineal feet of drainfield line. Pressure dosed systems are allowed a maximum of four doses per day and each dose should be at least ten times the volume of the laterals. This volume insures that each dose will deliver a sufficient volume of liquid to evenly utilize the complete trench area. Allowing only four doses per day will provide sufficient resting period for soils to re-aerate between each dose. However, such systems will require some periodic maintenance to insure proper operation. It is essential that the dosing siphons be checked weekly to insure that the systems do not enter and remain in a trickling stage. Such a problem can be easily corrected with a certified knowledgeable operator performing routine maintenance.

On-Site Public Water System

The new public water system to serve this proposed development will consist of two wells which will operate in tandem with a projected capacity of 65-75 gpm each. Water will be pumped to a buried steel storage reservoir with a capacity of 12,000 gallons. The well pumps will be controlled by a tank level monitoring system. Approximately 850 feet of six inch PVC AWWA C900 water pipe extends from the storage reservoir to the distribution network. The distribution network will consist of approximately 21,600 feet of four inch PVC AWWA C900 water pipe. There are three primary mains of which service lines distribute water to mobile spots. Each service will supply as many as three and normally two mobile homes. The design pressure will be at a minimum 35 psi with an average day demand of 21,000 gpd. Estimated peak demand is 120 gpm. The water system will not provide fire protection.

Soils at the Proposed Drainfields Sites

The mobile home park area of the camp will be located on Hilger and Sebud soil types. Limitations for these soils are moderate due to slopes and slow percolation. The slope across the proposed site is four percent to ten percent.

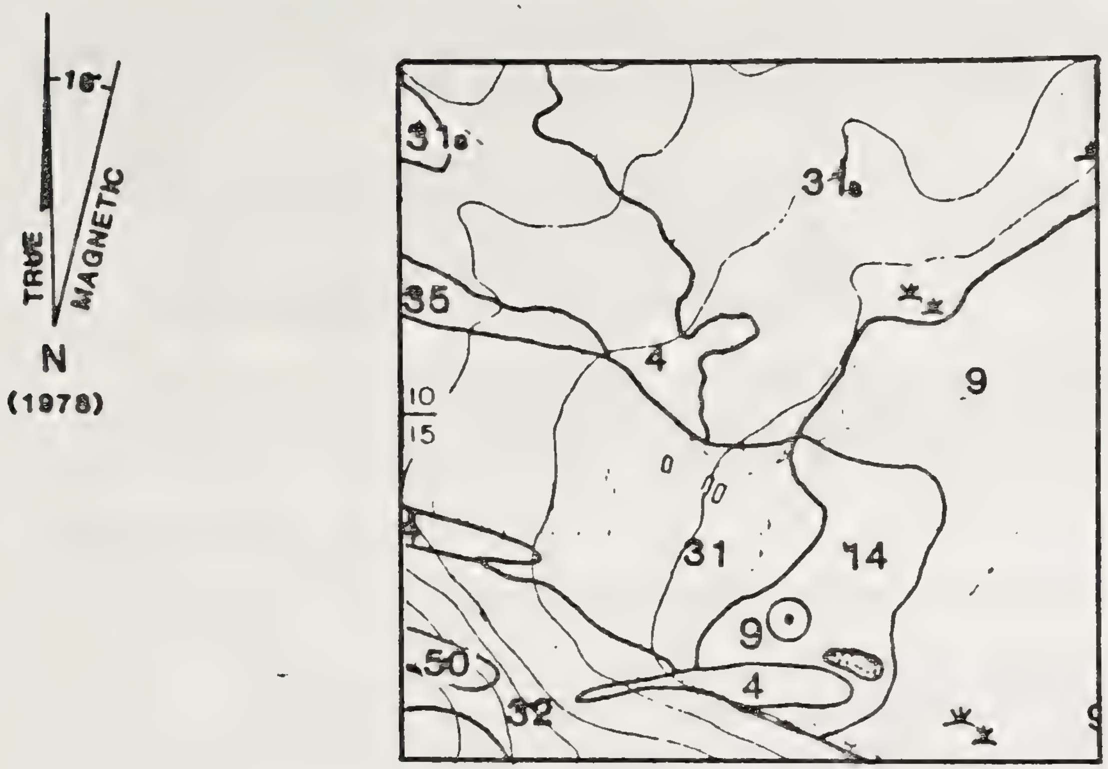
The soil in the area of the dormitories is rated as Lolo or Nesda. The Nesda soil is a gravelly sandy loam covering the zero percent to four percent grade area closest to Stillwater River on terraces and alluvial for deposits. They are deep soils with a brown horizon and are formed in material weathered from gravelly alluvium. They are underlain by sand and gravel at a depth of fourteen to twenty inches. Permeability is moderately rapid to rapid. The Hilger stony loam covers a portion of the alluvial fan deposit which is slightly steeper (four percent to six percent). It may be described as a deep, well drained soil developed by alluvial-colluvial material from igneous and sedimentary rocks. In a representative profile, the soils have a stony and cobbly sandy loam and loam texture with a moderate rather than a strongly developed B horizon. The underlying material is more of a stony sandy loam and loam rather than clay loam in the typical Hilger. The permeability is moderate. The Sebud stony loam soils covers the steepest (six percent to ten percent) portions of the site west of Hilger variant, that portion composed of upper alluvial fan material and sedimentary bedrock. Sebud is also present on a landslide block in the north-northeast end of the property. Sebud consists of deep, well drained soils formed in alluvium and colluvium from glacial till and in material weathered from mixed till. The surface is a grayish brown stony loam with a stony day loam subsoil and a stony sandy clay loam substratum.

Actual on-site soils testing was performed by Brown Engineering. Percolation test results at the proposed drainfield sites for the trailer court ranged from 12.14 minutes per inch to 23.5 minutes per inch, an average of 19.28 minutes per inch. The type of soil at this drainfield site proved to be Hilger stony loam variant. Limitations for this soils type is "moderate" and results from slope and slow permeability. The slope is minimal in the proposed drainfield. Two test pits were dug in the drainfield area and revealed the following:

0-15 inches of brown cobbly sandy loam
15-24 inches light brown cobbly sand loam
24-72 inches light brown cobbly moist loam
72- + inches light tan sandy clay loam 20 percent rock fragments

The water table appears to be at least 20 feet below the surface in the drainfield areas from previous site drilling work.

The slope in this area is about two percent and the proximity to surface water and domestic wells exceeds the 100 foot requirement. Presently there exists a stream which was rerouted in the past. This stream will be returned to its natural bed. This "new" stream location will allow the minimum clearance of 100 feet from either the park or dorm drainfields. Department approval will not be considered until the relocation has been completed.



Legend

4– Cryofluvents-Cryoboroll complex, moderately sloping

9– Nesda gravelly sandy loam, 0 to 4 percent slopes

14– Hilger stony loam, variant, 4-15% slopes

31– Sebud stony loam, 25 to 50 percent slopes

31a– Sebud stony loam, 25 to 50 percent slopes (landslides)

32– Sebud-Cheadle association, very steep

35– Hilger-Castner-Rock outcrop complex, 25 to 60 percent slopes

50– Rock outcrop-Castner association, steep slopes

⊙ Location of major soil samples

⁂ Wet Area

⬭ Lakes & Ponds

after Camp Dresser and McGee 1981

Brown engineering
[illegible] Montana [illegible] Phone: (406) [illegible]

scale 1:10000
date 8/13/86
dm clh
ckd
project SMC Construction Camp
title Stratton Ranch

SOIL CLASSIFICATIONS

Figure 3

On-site soils testing at the proposed drainfield site to serve the dormitory indicates soil to be a combination of Hilger and Nesda. A test pit dug in the drainfield area by Brown Engineering showed the following results:

0-6	inches grayish brown loam
6-20	inches light grayish brown loam
20-48	inches pale brown gravelly loam
48-65	inches grayish brown sandy loam
65- +	inches grayish brown very gravelly loam

The slope in this area is about two percent and percolation tests revealed a range of 8 to 11.4 minutes per inch. According to Brown Engineering, no limiting site factors exist for the drainfield site.

Storm Drainage

The following storm drainage information was provided by Brown Engineering.

1. The Drainage Plan for the Overall Development Plat was developed by using ground contours plotted from aerial photos and on-site data. The stormwater calculations are based on a rainfall intensity of a two year, six hour storm. The total rainfall for this storm in the Nye area is 1.2 inches for an intensity of 0.20 inches per hour average. The data is from the National Weather Service.

The "Rational Method" was used in the design procedure for peak flows. The runoff coefficient used for land in an unimproved area is 0.1 to 0.3. The value of 0.2 was used, although realistically the lowest value of 0.1 would apply for the porous soils on this site. Time-of-concentration calculations are not needed due to small size of drainage area. Instantaneous concentration was assumed rather than staged increases common to a larger development.

2. The Drainage Plan includes flows from all parts of the development. There is little if any indication of surface washing of soil due to runoff from adjacent steep slopes. The soils apparently absorb most rainfall before flows of any significant size are capable of occurring. Therefore drainage calculations are based on the specific development area. Provisions for additional drainage were made by oversizing major road crossings to handle large flows even though a problem is not anticipated. All culvert sizes were calculated and are presented for the development. The Phase I drainage area encompasses 6.3 acres.

3. The stormwater flow diagram shows flow directions for the proposed development. There are two main discharge points. One drains the subdivision into the pond and overflows to percolate onto the area below the pond. A second drains the dormitory area and a marshy area behind the dormitories to a strip of Forest Service land for percolation into the soils and recharge of the alluvial aquifer. Permission for this use of Forest Service ground has been discussed. No stormwater flow is expected to reach the Stillwater River via surface channelling.

4. Phase I will require a culvert crossing Palladium and a culvert crossing Platinum. The existing stream will be rerouted to cross the road

below the park and channelled to the area below the pond. A culvert is necessary to provide a stream crossing of the road and reroute the stream to its original direction. The marshy area north of the dormitory will be channelled across the entry road with a culvert to the USFS land as mentioned previously. This drainage will also pick up runoff from the dormitory area. Total runoff as calculated by the "Rational Method" for a two year, six hour storm is 45,000 gallons for the completed development. The percolation area is expected to handle this quantity easily. No effort was made to separate the stream from runoff since the stream ultimately percolates into the alluvium.

The majority of surface runoff is channelled into the existing manmade pond. From here, overflow is allowed to spread over the lower flat area near Highway 419. Actual drainage flow from this area is not expected to be changed significantly as a result of the development, due to the porous soils present.